US Army Corps of Engineers

DCAF Bulletin

Design Construction Analysis Feedback

No. 96-09 **Issuing Office:** CEMP-CE **Issue Date:** 21 JUN 96 **Exp. Date:** 30 DEC 98

CEMP-C

Subject: SAMPLE MASONRY PANELS

Applicability: GUIDANCE

1. The vast majority of our permanent military facilities are of masonry construction. Masonry is such a fundamental part of these facilities that it is the determining factor in both the aesthetics, and the basic structure. It is crucial that it be done correctly. One of the methods of insuring that the masonry is done in accordance with the plans and specifications is the construction of sample masonry panels. This is actually a mock-up of the wall systems of the facility. Construction of this is detailed in the Preparatory Phase Inspection, and should be used to resolve any unexpected problems in methods or technique, while perfecting the wall construction. Final inspection and acceptance of the sample panel serves as the Initial Phase Inspection.

2. CEGS 04200, "Masonry", Paragraph 1.3, recognizes the value of this mock-up. It requires panels for all structures with a wall area over 2,000 square feet, and also for smaller structures where appropriate. The specifications are quite detailed and devote more than one complete page to the composition of the panel and the items to be included.

3. Most of the sample panels observed on Design-Construction Evaluations are very incomplete and do not represent all of the wall elements required by the contract documents. The following items are the minimum that should be included in the sample panel:

a. Different types of masonry (color range, texture, bond pattern, mortar joint tooling, and coursing)

b. Grouting & reinforcement (vertical cores, collar joints, bond beams, lintels, mortar joints, and masonry corners)

c. Control joints, expansion joints, anchors, wall ties, insulation, flashing, and weep holes.

d. Reinforcement of wall openings.

e. Construction methods such as grouting, sequence of wythe construction, method of keeping the cavity clean, protection of unfinished work, and application of a sealer.

4. Construction of the sample panel should begin shortly after the Preparatory Inspection. The QA representative should closely monitor, and take an active advisory role in its construction. It does no good to have a sample panel with deficiencies. The completed panel should serve as a standard of workmanship for the entire facility, and should be readily available to the masons and other trades at the jobsite.

5. The BCOE reviewer should carefully analyze these paragraphs of the masonry specifications so that an appropriately configured sample panel can be specified. Occasionally, Design-Construction Evaluation teams encounter a sample panel that exceeds the minimum requirements of the guide specs, and includes door frames, window frames, electrical boxes and conduit, duct openings, and even roof framing connections. While such an extensive sample panel may not be appropriate for all contracts, there are many for which it would be. It is better to err on the side of too much than too little. In the experience of the DCE teams, contracts with well designed and constructed sample panels have fewer and less serious masonry deficiencies. One thing is sure, it is easier to correct a deficiency during construction of a sample panel, than to correct it during construction of the facility.

This DCAF was coordinated with Engineering Division (CEMP-ET).

CR Schroer

CHARLES R. SCHROER
Chief, Construction Division
Directorate of Military Programs